

**TRAINING PROGRAM OF INSTRUCTION (TPI)
FOR
DINFOS-BMRC-USMC
BASIC MULTIMEDIA REPRODUCTION COURSE - USMC**



Approved by:

Commandant
Defense Information School



**BASIC MULTIMEDIA REPRODUCTION COURSE - USMC
TRAINING PROGRAM OF INSTRUCTION**

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TRAINING PROGRAM OF INSTRUCTION

Preface

TRAINING PROGRAM OF INSTRUCTION FILE NUMBER (TPFN): DINFOS-BMRC

TITLE: Basic Multimedia Reproduction Course – USMC
(Formerly known as Basic Lithographer Course – USMC)

TRAINING LOCATION: Defense Information School, Fort George G. Meade, Maryland

SPECIALTY AWARDED: USMC MOS 4612 Combat Lithographer
CIVILIAN OPM Code: WG 4402 Bindery Worker

PURPOSE: The purpose of this course is to provide students with the required skills to perform and fulfill their duties and responsibilities of a basic lithographer.

COURSE DESCRIPTION: The scope of this course will provide military, selected civilian and allied military personnel with training that will develop the basic skills and technical knowledge to operate a computer, use desktop publishing software, including graphic design, page layout and image editing software. All students will learn the basics of typography, color theory and harmony, evaluation and quality control, and bindery operations

Training will also include the basic skills of color management as related to electronic imaging, digital desktop publishing and the operation and maintenance of high volume digital production equipment. Students will show proficiency in operating production equipment and associated computer peripherals in production of both soft copy and printed products in accomplishing the aforementioned tasks.

This TPI satisfies all requirements for BMRC-USMC.

PREREQUISITES:

USMC: Armed Services Vocational Aptitude Battery - GT 100.

OPM: As established by the Office of Personnel Management

Physical: As determined by the individual service; normal color vision

Obligated service requirement: As prescribed by the individual service

International students: English Comprehension Level (ECL) of 80; suggest the individual have at least one year of experience in computer operations to include the following: computer setup, mouse control, use of peripheral devices, file system navigation, file management, basic file creation, software menus and comparable charts in the Windows environment; experience with the use of computer graphics programs such as Illustrator, Photoshop, In-design, or equivalent. Must have distance visual acuity correctable to 20/20, and have normal color vision.

SECURITY CLEARANCE: None

CLASS SIZE: USMC

MAXIMUM: 6

MINIMUM: 3

ANNUAL COURSE CAP: 18

COURSE LENGTH: 43 Days

ACADEMIC HOURS: 336 Hrs

ADMINISTRATIVE HOURS: 7 Hrs

TOTAL COURSE HOURS: 343 Hrs

INSTRUCTOR CONTACT HOURS: 639 Hrs

TYPE/METHOD OF INSTRUCTION: USMC

Lecture (L) 37 Hrs

Performance Exercise (PE) 242.25 Hrs

Demonstration (D) 23.75 Hrs

Examination 33 Hrs

Performance Examination (EP) 29 Hrs

Written Examination (EW) 4 Hrs

Administration (AD) 7 Hrs

TRAINING START DATE: October 2006

ENVIRONMENTAL IMPACT: None. DoD policy was followed to assess the environmental impact.

MANPOWER: The Interservice Training Review Organization (ITRO) formula was used to determine the number of instructors required.

EQUIPMENT AND FACILITIES: The Course Design Resource Estimate (CDRE) contains this information.

TRAINING DEVELOPMENT PROPONENT: Defense Information School, Directorate of Training, Course Development Division (DINFOS/DOT-CDD): 301 677-3273; DSN 622 – 3273

FUNCTIONAL AREA 1 INTRODUCTION

TPFN: DINFOS-BMRC-001-001-

UNIT TITLE: Introduction to Basic Multimedia/Reprographics

INSTRUCTIONAL TYPE AND HOURS: 7.5L

TOTAL INSTRUCTIONAL HOURS: 7.5

PREREQUISITE TPFN: N/A

TASK(S):	001	Identify safety hazards within a graphic/print shop.
	002	Examine printing regulations and policies (copyright/reproduction).
	003	Prepare printing job work jacket
	004	Describe print shop operations and functions
	005	Identify methods of printing reproduction and discuss general information about service bureaus.

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn terms, definitions and procedures regarding safety and security within a graphic/print shop. Students discuss how to develop good customer relations, prepare and review job work jackets, and the basic operations and functions of a print shop. Students receive an overview of printing regulations and policies, including copyright and security, and the different methods of printing and reproduction. Students participate in a general discussion about service bureaus. A final written examination will be given at the end of Functional Area 2. Minimum passing grade is 70 percent on written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Government Printing and Binding Regulations (JCP, No. 26); Department of the Navy Publications and Printing Regulations (P-35); NavPubInst 5600.44D (Reprographics Management); Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Navy Customer Service Manual NAVEDTRA 14056.

INSTRUCTOR/STUDENT RATIO: 1:6(L)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Ensure electrical equipment is maintained in accordance with manufacturer's specifications.

FUNCTIONAL AREA 2 FUNDAMENTALS

TPFN: DINFOS-BMRC-002-001-

UNIT TITLE: Typography Fundamentals

INSTRUCTIONAL TYPE AND HOURS: 2L

TOTAL INSTRUCTIONAL HOURS: 2

PREREQUISITE TPFN: All previous TPFNs

TASK(S): 001 Identify the anatomy and categories of type.

SUMMARY OF INSTRUCTION: Using informal lecture, students are introduced to the fundamentals and principles of typography. Students learn the origins of the alphabet, the anatomy of type, categories of type, and the fundamentals of text layout. A final written examination will be given at the end of this functional area. Minimum passing grade is 70 percent on written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Illustrator Draftsman Manual DM NAVEDTRA 10472; *Looking Good In Print*, Roger C. Parker; applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6(L)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 2 FUNDAMENTALS

TPFN: DINFOS-BMRC-002-002-

UNIT TITLE: Computer Fundamentals

INSTRUCTIONAL TYPE AND HOURS: 1L, 3PE, 2D, 1EW

TOTAL INSTRUCTIONAL HOURS: 7

PREREQUISITE TPFN: All previous TPFN's.

TASK (S):

001	Define basic terms about computer hardware and software.
002	Perform basic computer operations and basic troubleshooting procedures.
003	Perform computer systems and file management.
004	Use a local area network.
005	Measurement and feedback (FA1 & FA2)

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn basic terms and definitions about computer hardware and software, computer setup, and system configuration. Through computer-guided instructions and demonstration, students gain practical knowledge about a computer operating system, local area networks, and file management. A final written examination will be given at the end of this functional area. Minimum passing grade is 70 percent on written examinations.

REFERENCES: Student Guide; *How Computers Work*, Ziff Davis; Lithographer's Manual (9th Ed), Government Printing and Binding Regulations (JCP, No. 26); Department of the Navy Publications and Printing Regulations (P-35); NavPubInst 5600.44D (Reprographics Management); Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Navy Customer Service Manual NAVEDTRA 14056 Draftsman Manual DM NAVEDTRA 10472; applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6 (L, EW); 1:3 (D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

**FUNCTIONAL AREA 3
DIGITAL GRAPHIC DESIGN**

TPFN: DINFOS-BMRC-003-001-

UNIT TITLE: Digital Page Layout and Design

INSTRUCTIONAL TYPE AND HOURS: 3L

TOTAL INSTRUCTIONAL HOURS: 3

PREREQUISITE TPFN: All previous TPFN's

TASK(S): 001 Identify the fundamentals of digital color theory and color harmony.
 002 Identify elements of digital layout and design.

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn basic terms and definitions of the elements and principles of layout and design. Students receive information on the fundamentals of color theory and page layout; color is introduced as an integral element of design and is emphasized throughout the course of instruction.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Draftsman Manual DM NAVEDTRA 10472; *Looking Good In Print*, Roger C. Parker; *An Introduction to Digital Scanning*, *Digital Color PrePress*, vol 4, Agfa; *Color Harmony, A Guide to Creative Color Combinations*, Rockport Publishers; Kodak Colorflow ICC Profile Tools Training Manual; Kodak Colorflow Profile Editor Manuals; Kodak Digital Learning Center, Digital Imaging Fundamentals, What is Color?

<http://www.kodak.com/US/en/digital/dlc/book3/chapter2/index.shtml>

INSTRUCTOR/STUDENT RATIO: 1:6(L)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 3 DIGITAL GRAPHIC DESIGN

TPFN: DINFOS-BMRC-003-002-

UNIT TITLE: Vector-based Graphic Design

INSTRUCTIONAL TYPE AND HOURS: 1L, 33.5PE, 1.5D, 4EP

TOTAL INSTRUCTIONAL HOURS: 40

PREREQUISITE TPFN: All previous TPFN's

TASK (S):

001	Define basic terms about vector-based graphic design.
002	Use vector-based graphic design software.
003	Use a color printer.

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn basic terms and definitions about vector-based graphic design software. Through demonstration and performance exercise, students learn how to use vector-based graphic design software. Students create an illustration project using vector graphics software and a color printer. Application of basic layout, design fundamentals and color theory are emphasized in all tasks. A performance examination covering the above tasks will be given at the end of this block of instruction. Minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Draftsman Manual DM NAVEDTRA 10472; *Looking Good In Print*, Roger C. Parker; applicable manufacturers' manuals; Adobe Illustrator tutorials; *An Introduction to Digital Scanning, Digital Color PrePress, vol 4*, Agfa; Kodak Digital Learning Center, Printer Technology.
<http://www.kodak.com/US/en/digital/dlc/book2/chapter2/index.shtml>

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP); 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 3 DIGITAL GRAPIC DESIGN

TPFN: DINFOS-BMRC-003-003-

UNIT TITLE: Image Editing/Raster-based Design

INSTRUCTIONAL TYPE AND HOURS: 2L, 31.75PE, 3.75D, 2EP

TOTAL INSTRUCTIONAL HOURS: 39.5

PREREQUISITE TPFN: All previous TPFN's.

- TASK (S):**
- 001 Define basic terms about raster-based graphic design.
 - 002 Define basic terms about image ethics and image editing.
 - 003 Use image-editing software.
 - 004 Use raster-based image design software.
 - 005 Use a flatbed image scanner.
 - 006 Use a film scanner.
 - 007 Use a digital camera.
 - 008 Apply image/data compression (lossy/lossless).

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn basic terms and definitions of image ethics, image editing, raster-based software, scanners, and digital cameras. Through a demonstration and performance exercise, students learn proper use of a flatbed image scanner, digital camera, and use of image editing raster-based software. Application of basic layout, design fundamentals and color theory are emphasized in all tasks. A performance examination covering the above tasks will be given at the end of this block of instruction. Minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), DODD 5040.5 (Alteration of Official DOD Imagery), Government Printing and Binding Regulations (JCP, No. 26); Department of the Navy Publications and Printing Regulations (P-35); NavPubInst 5600.44D (Reprographics Management); Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Draftsman Manual DM NAVEDTRA 10472; *Looking Good In Print*, Roger C. Parker; Adobe Photoshop tutorials; *An Introduction to Digital Scanning*, *Digital Color PrePress*, vol 4, Agfa; *An Introduction to Digital Photo Imaging*, Agfa; Applicable manufacturers' manuals; Kodak Digital Learning Center, Digital Imaging Fundamentals. <http://www.kodak.com/US/en/digital/dlc/book3/chapter1/index.shtml>

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP): 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 3 DIGITAL GRAPHIC DESIGN

TPFN: DINFOS-BMRC-003-004-

UNIT TITLE: Desktop Publishing

INSTRUCTIONAL TYPE AND HOURS: 1L, 15.5PE, 1.5D, 2EP

TOTAL INSTRUCTIONAL HOURS: 20

PREREQUISITE TPFN: All previous TPFN's.

TASK (S):

001	Define basic terms about desktop publishing.
002	Use elements of digital page layout and design.
003	Apply vector and raster techniques to create hard copy desktop publishing project.

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn basic terms and definitions about desktop publishing. Through demonstration and performance exercise, students use desktop publishing software. Students create a graded project combining text and graphic images, elements of page layout, design fundamentals, color theory, and electronic format extensions for HTML and PDF documents. The raster and vector illustrations created by the student are used in this project for traditional and electronic publishing. A performance examination covering the above tasks will be given at the end of this block of instruction. Minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Government Printing and Binding Regulations (JCP, No. 26); Department of the Navy Publications and Printing Regulations (P-35); NavPubInst 5600.44D (Reprographics Management); Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Navy Customer Service Manual NAVEDTRA 14056, Draftsman Manual DM NAVEDTRA 10472; *Looking Good In Print*, Roger C. Parker; *An Introduction to Digital Scanning, Digital Color PrePress, vol 4*, Agfa; applicable manufacturers' manuals; Adobe InDesign tutorials; Electronic Publishing Guide, Adobe Acrobat Publishing for the World Wide Web or CD-Rom.

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP); 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 4 MULTIMEDIA DESIGN

TPFN: DINFOS-BMRC-004-001-

UNIT TITLE: Presentation Software

TPFN HOURS AND TYPE: 5L; 1D; 11PE; 2EP

TPFN TOTAL HOURS: 19

PREREQUISITE TPFN: All previous TPFN's

- TASK(S):**
- 001 Define basic terms and design principles of projected media, to include overhead viewgraphs, 35mm slides, film recorders, electronic projection systems and emerging technology.
 - 002 Define basic terms and characteristics of electronic presentation software, to include formats, slide master, text features, import options, output options, organization and emerging technology.
 - 003 Define charts and graphs, to include types of charts, their purpose, the elements of a chart, and design considerations.
 - 004 Explain basic terms and concepts for video teleconferencing to include operating principles, equipment and system management.
 - 005 Use presentation software to create an electronic presentation that incorporates raster images, vector images, digital audio-video, basic animation, charts and hypermedia.
 - 006 Set up a presentation using various projection systems in varying environments.

SUMMARY OF INSTRUCTION: During informal lecture, students learn basic terms, characteristics, and definitions of presentation software, to include projected media, overhead viewgraphs, 35mm slides, electronic presentations, charts and graphs, basic animation, digital audio-video and video teleconferencing. Through demonstration and performance exercise, students use presentation software to create electronic presentations. A performance examination covering the above tasks will be given at the end of this block of instruction. An Interim and Final written examination will be administered during this functional area. The minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Draftsman Manual DM NAVEDTRA 10472; *Color Harmony, A Guide to Creative Color Combinations*, Rockport Publishers; applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP); 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cable cords and subdued-lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 4 MULTIMEDIA DESIGN

TPFN: DINFOS-BMRCC-004-002-

UNIT TITLE: Digital Audio and Digital Video

TPFN HOURS AND TYPE: 3L; 1D; 12PE; 1EW

TPFN TOTAL HOURS: 17

PREREQUISITE TPFN: All previous TPFN's

- TASK(S):**
- 001 Define basic terms, concepts, and procedures for digitizing, editing, and saving digital audio files.
 - 002 Define basic terms, concepts, and procedures for digitizing, editing, compressing, and saving digital video files.
 - 003 Define basic terms about weapons systems imagery and product distribution.
 - 004 Use digital audio and digital video software.
 - 005 Measurement and feedback.

SUMMARY OF INSTRUCTION: During informal lecture, students learn basic terms and definitions about digital audio, digital video, armament delivery recordings, imagery captions, video recorders, and product distribution. During a guided demonstration, students will use digital audio and digital video software to complete a performance exercise. An Interim and Final written examination will be administered during this functional area. Minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Draftsman Manual DM NAVEDTRA 10472; applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6(L, D); 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cables, cords and a subdued lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 4 MULTIMEDIA DESIGN

TPFN: DINFOS-BMRC-004-003-

UNIT TITLE: Web Page and the Internet

TPFN HOURS AND TYPE: 4L; 1D; 27PE; 8EP

TPFN TOTAL HOURS: 40

PREREQUISITE TPFN: All previous TPFN's

TASK(S):

- 001 Define basic terms about image/data transmission and satellites.
- 002 Describe telecommunications software.
- 003 Define Policies and regulations governing web sites.
- 004 Transmit data via telecommunications.
- 005 Create a Web site with web page design software.

SUMMARY OF INSTRUCTION: During informal lecture, students learn basic terms and definitions of image/data transmission such as transferring graphical data from server to server, modulation techniques such as FTP, HTTP, satellites, and Web page design. Through demonstration and performance exercises, students use the Internet, Web browser, Web page design software, and transmit data via telecommunications. A performance examination covering the above tasks will be administered at the end of this block of instruction. An Interim and Final written examination will be administered during this functional area. Minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Navy Customer Service Manual NAVEDTRA 14056, Draftsman Manual DM NAVEDTRA 10472; applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP); 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cables, cords, and a subdued lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use.

FUNCTIONAL AREA 4 MULTIMEDIA DESIGN

TPFN: DINFOS-BMRC-004-004-

UNIT TITLE: Multimedia Authoring Software

TPFN HOURS AND TYPE: 2L; 2D; 32PE; 2EP; 1EW

TPFN TOTAL HOURS: 39

PREREQUISITE TPFN: All previous TPFN's

- TASK(S):**
- 001 Define basic terms, concepts, and procedures for multimedia authoring and animation.
 - 002 Use multimedia-authoring software to produce an interactive multimedia project, to include archiving images on recordable CD's.
 - 003 Create animation
 - 004 Use internal/external-archived images.
 - 005 Measurement and feedback (FA 4).

SUMMARY OF INSTRUCTION: During informal lecture, students learn basic terms and definitions about multimedia authoring and animation. Through demonstration and performance exercises, students use multimedia software, animation software, recordable and photo CDs, and internal/external archived images to create an interactive multimedia project. A performance examination covering the above tasks will be administered at the end of this block of instruction. An Interim and Final written examination will be administered during this functional area. The minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Guide; Lithographer's Manual (9th Ed), Marine Corps Order 1510.54 (ITS for V.I. OCCFLD 46); Marine Corps Order P5600.31 (M.C. Publications and Printing Regulations); Navy Customer Service Manual NAVEDTRA 14056, Draftsman Manual DM NAVEDTRA 10472; applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP, EW); 1:3(D, PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cables, cords and a subdued lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use

FUNCTIONAL AREA 5 BINDERY OPERATIONS

TPFN: DINFOS-BMRC-005-001-

UNIT TITLE: Bindery Equipment Operations

INSTRUCTIONAL TYPE AND HOURS: .5L; 3.5D; 4PE; 1EW

TOTAL INSTRUCTIONAL HOURS: 9

PREREQUISITE TPFN: All previous TPFN's

TASK (S):	001	Identify safety procedures associated with bindery equipment.
	002	Set up bindery equipment.
	003	Operate bindery equipment.
	004	Replace bindery equipment consumables.
	005	Measurement and Feedback

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn the basic skills required to prepare, operate and maintain a power paper cutter, power paper stitcher, power paper drill, and power paper folder. Given the equipment, necessary tools and materials, student practical exercise sheet, and appropriate references, through demonstration and practical exercise, students learn to replace bindery equipment consumables. Appropriate safety measures will be practiced. A written examination will be given at the end of this block of instruction. Minimum passing grade is 70 percent on all written examinations.

INSTRUCTOR/STUDENT RATIO: 1:6(L, EW); 1:3(D, PE)

SAFETY FACTORS: Electrical hazards such as frayed power cords and cracked or missing outlet covers; electrocution hazard—ensure there is no standing water around electrical equipment and area is clean and clear of obstructions; equipment operating hazards—students will receive safety brief on each piece of equipment.

REFERENCES: Student Study Guide; Lithographer Manual LI NAVEDTRA 10452; Lithographer's Manual (9th Ed), applicable manufacturers' manuals.

FUNCTIONAL AREA 6 DIGITAL CALIBRATION

TPFN: DINFOS-BMRC-006-001-

UNIT TITLE: Digital Image Input / Output

TPFN HOURS AND TYPE: 4L, 2D, 18PE

TPFN TOTAL HOURS: 24

PREREQUISITE TPFN: All previous TPFN's

TASK(S):

001	Identify and define characteristics and principles of input and output devices.
002	Define color calibration, characterization and conversion as it relates to electronic imaging
003	Perform calibration, characterization and conversion of color monitors, scanner, and output devices.
004	Apply input / output principles.

SUMMARY OF INSTRUCTION: Students are given an overview of procedures associated with the calibration and characterization of computer monitors, scanners, digital cameras and output devices. During a guided demonstration, students will apply these procedures using color management hardware and software to complete a performance exercise. Students will also apply color management profiles and color working spaces to images in order to maintain color integrity from image acquisition through to output.

REFERENCES: Study guide; applicable manufacturer's manuals; *An Introduction to Digital Scanning, Digital Color PrePress, vol 4*, Agfa.

INSTRUCTOR/STUDENT RATIO: 1:6(L, D, EP); 1:3(PE)

SAFETY FACTORS: Electrical hazard from computer systems connections; tripping hazard from cables, cords and a subdued lighted environment; Carpal Tunnel Syndrome possibility from the keyboard and mouse use

FUNCTIONAL AREA 7 DIGITAL PRODUCTION

TPFN: DINFOS-BMRC-007-001-

UNIT TITLE: Digital Production Equipment

INSTRUCTIONAL TYPE AND HOURS: 1L, 4.5D, 53.5PE, 9EP

TOTAL INSTRUCTIONAL HOURS: 68

PREREQUISITE TPFN: All previous TPFN's

- TASK (S):**
- 001 Describe components of digital production equipment.
 - 002 Describe basic operating procedures for B&W and color production equipment.
 - 003 Demonstrate color management procedures for RIP-based printing
 - 004 Demonstrate text-editing operations using printer output software.
 - 005 Demonstrate imposition format and selection techniques in electronic production equipment.
 - 006 Operate digital production equipment.
 - 007 Produce a printed product.
 - 008 Identify evaluation and quality control procedures.
 - 009 Perform evaluation and quality control.
 - 010 Measurement and feedback

SUMMARY OF INSTRUCTION: Using informal lecture and performance exercises, students learn basic transferable skills and essential knowledge required for production of printed materials with digital production equipment. Students are given the appropriate digital production equipment, all the necessary tools and materials, work orders, student practical exercise sheet, and appropriate references. Students learn the components and basic operating procedures of digital production equipment; load stock, change toner cartridges, operate controls, perform editing functions, clear jams, error messages, and learn the basic care and maintenance of digital production equipment, while producing printed materials. Students also learn proper procedures for color management in RIP-based printing, including evaluation and quality control procedures. A performance examination will be given at the end of this functional area. The minimum passing grade is 70 percent on all performance and written examinations.

REFERENCES: Student Study Guide, applicable manufacturers' manuals.

INSTRUCTOR/STUDENT RATIO: 1:6(L, EP); 1:3(D, PE)

SAFETY FACTORS: Electrical hazards such as frayed power cords and cracked or missing outlet covers; electrocution hazard—ensure there is no standing water around electrical equipment and area is clean and clear of obstructions; equipment operating hazards—students will receive brief on equipment specific safety issues.

**FUNCTIONAL AREA 8
ADMINISTRATION**

TPFN: DINFOS-BMRC 008-001-

UNIT TITLE: Course Administration

TPFN HOURS AND TYPE: 7AD

TPFN TOTAL HOURS: 7

PREREQUISITE TPFN: None

TASK (S):	001	In-processing/Orientation.
	002	Course Evaluation.
	003	Out processing.
	004	Graduation.

SUMMARY OF ACTIVITIES: Self-explanatory.

REFERENCES: DINFOS Policy and Procedures Manual

INSTRUCTOR/STUDENT RATIO: 1:6(AD)

SAFETY FACTORS: N/A